DOCUMENT RESUME

ED 121 797 SP 010 068

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TITLE The Role of Theory in Practice.
PUB DATE 5 Apr 76
NOTE 18p.; Paper presented at the Annual Convention of the American Alliance for Health, Physical Education, and Recreation (Milwaukee, Wisconsin, April 5, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Educational Change; *Educational Problems; *Educational Research; *Educational Theories; *Research Utilization

ABSTRACT

There are at least three ways in which educational theory can be used in practice: (1) to reexamine our traditional approaches, (2) to provide direction in future practice, and (3) to generate research. Reexamination of traditional approaches through analysis and utilization of theoretical methods is one means of promoting constant growth and assertion of program efficacy. The results of an evaluation process can then lend some direction to future program design which in turn generates topics for future research and development. Theory is frequently misused, either by acceptance without analysis, by rejection without analysis, or most commonly, by inappropriate application. Use of theory to examine the traditional and provide direction to future practice and research is the total integration of theory and practice. (DMT)

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The Role of Theory in Practice*

by

Jean L. Pyfer

Did you know that each of us is a theorist who consistently puts into practice our theoretical beliefs? If you doubt that statement stop and think of when was the last time you walked around a ladder rather than under it? Have you ever changed your direction to avoid the path of a black cat? Surely someone in here shuttered the last time they broke a mirror. You may argue that these are superstitions, not theories - but perhaps one man's theory is another man's superstition. Let me give you an example:

Those of us who work around children have observed that when the weather changes, children's behavior changes. The theory behind that observation is that atmospheric pressure affects the fluids in the body which in turn influences behavior. I would imagine that because of your experience with children you would accept that theory as sound and quite acceptable; however, just the other day I was talking with a bright young clinical psychologist on our campus who was explaining to me the fallacy of such thinking. In his opinion marked changes in the barometer are no indication that behavior changes can be expected. Who am I to believe — my observations or that psychologist's opinions? I might accept his position if I didn't know that he has no children and he has never worked around children. Then too, it was a blustery day and he was a little more irritable than usual, and, too, he was attempting to reconcile with his wife who had left him last spring when the rainy season was upon us.

I don't mean to make light of the gentleman's plight. Rather, my purpose is to point out that not all individuals may agree with one person's reasoning

SP 010 068

*Presentation made at American Alliance of Health, Physical Education and Recreation convention, Milwaukee, Wisconsin, April 5, 1976.

as to why events occur, but nevertheless, many explanations about cause and effect are in fact the seed bed of theory.

What separates theory from supposition? Is it the sophistication of the language? If I were to state that "heavily pigmented felines if passing at right angles to a homosapien's line of approach, can create havoc with the homosapien's serenity", would you believe me more readily than if I said, "if a black cat crosses your path, you will have bad luck"? Or is credibility related to the credentials of the observer? I remember participating in a vigorous discussion with some other graduate students a number of years ago, when most of us were questioning the legitimacy of some theory that was in vogue at that time. The student who was arguing in favor of the theory, unable to overcome our objections as to the practicality of the position, in desperation finally said, "Well, you know, he's written a book." There was a brief period of silence before the rest of us said in unison, "so what?" We were not willing to accept an explanation for cause and effect because someone published the statement in the written word. What then does make the difference?

When it comes right down to what separates theory from superstition I believe the credibility of any set of postulates depends upon how well the position holds up in practice. The verility of any theory depends upon whether you and I, the practitioners can consistently demonstrate the truthfulness of the supposed relationship in our every day work world. We, in fact, are the researchers who can make or break a theory, and if this statement is true we have an awesome responsibility. We can either extend the boundaries of knowledge or defend untenable positions. We can help learners advance beyond our limitations or rein them to the today's level of performance.

Yes, the practioner's participation is a critical factor in separating superstition from fact.

What role do we play? Webster defines theory as "an analysis of a set of facts in their relationship to one another." Our task becomes one of providing as accurate an analysis as is possible in our working areas. The question becomes one of how can we best use theory and avoid abusing our responsibilities to the learners in our charge.

During the rest of my talk I will offer some suggestions as to how we can utilize theory to benefit both our learners and ourselves in our quest to improve sound practice. I will also make some observations about how theory can be abused and limited.

There are at least three ways we can utilize theory in practice. We can use theory 1) to re-examine our traditional approaches

2) to give some direction to our future practices

3) to generate research in the field.

Why must we re-examine our traditional approaches? Many of us here have lived through an age when tradition mandated all we did to an age when "change" appears to be the critical survival factor. I do not intend to defend either position, but rather to suggest that for knowledge to grow we need to constantly analyze the effectiveness of our standard way of doing things. Let me give you a personal example.

At one point in my career I was involved in helping design a physical education curriculum model for use with trainable mental retardates. We elected not to use any one theory of development, but to draw upon sound knowledge that was available to us at that time. We put together a very extensive package I believed would enable teachers to solve the motor development problems of moderately retarded youngsters. We then set about to field test the model with appropriate groups. At the end of the initial trial period I was dismayed because we still had some youngsters who couldn't

demonstrate the behavioral objectives we had so carefully analyzed and sequenced. I would have liked to blame the failure on ineffective teaching, BUT I had been the teacher, and really found that explanation intolerable. People were very understanding about the failure - after all we had used the best known facts available to us. Perhaps the inability to demonstrate statistical validity was because the learners were at fault in some way, however I've never been very comfortable with the opinion that learning failures are a result of the learner's inabilities.

Not long after that experiment I was thrust into a situation where some new theories I was unfamiliar with were being tried. I was very uncomfortable in the assignment, but had accepted it before I realized the direction the project was taking. Faced with a situation of sink or swim, my survival instinct won out. I had no choice but to plow into the literature and attempt to comprehend what was being tried. Fortunate for me, that effort began to shed some light on the problems we had with our curriculum model I referred to earlier. I learned that some factors may have been in operation that we hadn't taken into account. Let me show you what I mean.

(Figure A)

Contemporary theorists agree that efficient movement is composed of three levels of involvement -- there must be sensory input, integration of the information within the central nervous system, and a motor output. I have attempted to depict those three levels in the simplistic model before you. In no way should this model be interpreted as an all-inclusive replication of all the components of efficient movement. Rather, it is an attempt to convey the levels of entry of some ingredients of motor behavior. The ingredients have been borrowed from some contemporary theories that I will refer to later in this talk.

My whole point is that when I arrived at this prospective of motor behavior, I began to understand why the best of traditional models had failed in practice. We were simply operating from a base of incomplete knowledge. We were attempting to elicit efficient movement patterns by dealing with only the integration and output levels of development. In effect, we were assuming adequate sensory inputs were available to the learners, and through manipulation of integration and output performance, efficient movement would result.

The last six years have taught me the fallacy of that assumption. What I know now is that presence of some sensory inputs such as abnormal reflex patterns probably interferred with a number of output behaviors. We cannot expect a child to skip efficiently if positive or negative supporting reflexes are present in his repertoire of behavior patterns. Nor can we expect a child with distorted visual input to accurately assess the path of a moving ball.

It was only through re-examination of our traditional approach in light of newer theoretical knowledge that I had any insight at all as to where our design went awry.

The second application of theory is to use it to alter our present practices. Now I am well aware of the objections of experimenting with theory on children. There are many people who argue that we should only practice what research has demonstrated without a doubt to be effective. I am also well aware that the benefits from physical education have been questioned for years, and those of us in the perceptual-motor area are constantly criticized and often ridiculed because of the inadequate base of scientific evidence from which we operate. But, what many people don't understand is that practice outstrips scientific evidence by 20 years. What I'm saying is that the alert, intuitive teacher has been known to discover and practice very effective teaching techniques that researchers were not able to statistically validate for twenty years. The same

thing is true in physical therapy -- the sharp clinician can apply effective therapy long before the neurologist can explain why the treatment is effective.

I do not favor the indiscriminate use of theory in our programs, but rather it seems quite defensible to attempt a different way of doing things when we are stymied with a lack of progress by our learners. Accountability mandates that we demonstrate that our programs do effect positive changes. This means we must become skilled in evaluation of performance levels, and effectively intervene with a program that results in progress for our charges. You and I know that not all of our programs are beneficial to all children. Where then do we begin to search for new or different ideas to try? Theory is a logical starting place, but how are we to determine which theory or parts of theories to select?

A technique I have used quite effectively in the last few years is to try to select suggestions from appropriate theorists about how to work with those children. To clarify my point let us refer once again to the motor development model I introduced earlier.

(Figure A)

If my evaluation results cause me to suspect problems at the input or integration levels, I turn to Ayres for activity suggestions. If I can rule

(Figure B)

out vestibular, tactile and auditory problems, I might select Kephart activities.

(Figure C)

I can rely on Frostig for a number of visual integration suggestions, and her

(Figure D)

most recent literature deals also with motor integration activities. Cratty has several excellent suggestions for some integration problems and most output

(Figure E)

level functions. Barsch seems to be speaking to both integration and output performance also.

(Figure F)

Let me be the first to say that the theories I have made reference to may be more incompassing than I have given them credit for. I learn something new every time I re-think them, and many of my graduate students argue that every theory speaks to every developmental level. If that is the case, I am not yet fully understanding them. Perhaps, given time, I will see the application more clearly.

I can attest to the fact that it is possible to elicit normative age standard performance from a child with perceptual motor problems if his problem is carefully analyzed, his level of development determined, and activities are selected that are appropriate for his developmental stage. We can use contemporary theories to assist us in helping these children resolve their problems. It may take the statisticians 20 years to demonstrate our effectiveness, but that should not deter us from at least trying to solve the problem.

The third way we can utilize theory is to generate research ideas. A professor I once had said that the greatness of a theory depends upon how much research was generated from that theory. I'm not sure I fully agree with that statement, but I do believe it will take us 50 years to figure out what Piaget is really saying to us — at least it will take me 50 years.

Many people believe that research is an activity that is carried on by college professors and hard pressed graduate students who are trying to complete their degree requirements. I can recall when my graduate advisors were pressing me to take more research and statistic courses that I told them quite sharply my goal was to become a good teacher, not a researcher. They smiled knowingly

as they signed me into every statistic course available in the department. They knew then and I know now that the good teacher is effective because he or she is a good researcher.

The good teacher is constantly asking, "why does this occur", "if I changed this activity, what would result", "is there a better way to promote learning in this child"? The questions go on and one because the effective teacher wants to find a better way to help her learners. The way teachers become more effective is to try new ideas, observe the resulting learner behaviors, and analyze the effectiveness of the practice. This is also researcher behavior.

Certainly those of you who venture forth and try out some theoretical approaches we have discussed here today find yourself obligated to evaluate the value of what you attempted. When you do so, you move further into the category of researcher. Though you may not apply sophisticated statistical analyses to your results, your research efforts are as legitimate as the college professor and the struggling graduate student. Unfortunately, you do not often publish your results, but, nevertheless, you have contributed to extension of knowledge just as surely as the individual involved in formal research pursuits.

The theories we have addressed today need the real life investigation only practitioners can provide. I urge you to pursue your inquiries and, when possible, share your results.

Let us turn our attention now from uses of theory to some common abuses that I have seen occur or have participated in. In my opinion, there are three prevalent abuses of theory. First, we see acceptance of theories without some degree of critical analysis; second, some people categorically reject theories without critical analysis; and third, and probably most common, is inappropriate application of theory.

After all I've said about the ways to use theory I'm sure some people find it strange for me to suggest that there is anything wrong with the unbridled acceptance of a theoretical construct. But, I do object when I see my own students latch on to a theory and pursue its application regardless of the effect on the learner.

An example that comes most readily to mind is a situation I observed in our clinic recently. One of our therapists was obviously trying to use the behavior modification technique known as extinction on a child with a behavior problem. I know the value of and advocate use of extinction when a child has some conscious control of his behavior. But this young child was literally bouncing off every other person and piece of equipment in the room while his therapist stood quietly aside and watched the scene with hands folded. I broke one of my own rules by grabbing the child and restraining him until he regained his self-composure.

Later, while discussing the event with the therapist, I asked why she had allowed the child to endanger himself and others in the room with his behavior. The response was, "well, so-and-so says extinction is a very effective behavior modification technique." It had never crossed this young woman's mind that there are times when it might be inappropriate to use extinction. All she remembered was that an authority figure had endorsed the technique. She saw no need to question use of the postulate in every occasion.

When we work with children we can't afford to make wholesale application of theory unless we critically assess the benefits to the child. Something is not necessarily better than nothing. If the practice does not promise some fruitful results to the learner, I find it difficult to endorse its use.

Rejection of a theory without critical analysis is almost as untenable as the first abuse. I believe we most often avoid accepting a theory either

because we are afraid of trying something new, we don't understand what the theorist is saying, or we believe the position is in direct opposition to another theory we hold dear. I get into difficulty most often because of the last two reasons.

It took me several years to even listen to argument about the benefits of behavior modification techniques because I believe so fully in the perceptual psychological view of working solely toward self-actualization through enhancing self concept. It took some very vocal graduate students who were steeped in the value of behavior mod technique many hours of discussion to convince me that while enhancing self concept I might indeed be using behavior modification techniques. Fortunately for us all they did not threaten my self concept by attacking the theory I held dear. Instead they pointed out the compatability of parts of each of the theories.

When I first came to Kansas I had not read nor did I attempt to read Kephart theory. Even though I eventually taught a course that surveyed contemporary perceptual-motor theorists, I did not include Kephart. When one of my colleagues asked why I avoided reviewing this very prominent theorist, I just shrugged my shoulders and said I didn't think his theory had anything to offer. That very fine friend of mine said, "Jean, I can understand sins of commission, but I really have difficulty understanding why a person would participate in a sin of omission." His point was well taken - what right did I have to force my bias on students. Even if I didn't understand, I had little justification for denying them the opportunity to understand. Now, I teach Kephart along with all the rest and learn something new from him each time around. Yes, rejection of theories without critical analysis is an abuse I'm very familiar with.

With all the problems I see with the first two abuses, I'm convinced the third abuse has retarded our pursuit for knowledge the most. Inappropriate

application of perceptual-motor theories has plagued us since their appearance and will continue to plague us until we overcome the majority of unfortunate experiences educators have had with these theories.

Our biggest problems were an indirect result of basic postulates of Piaget's, Gagne's and Bruner's cognitive development theories. All of these gentlemen propose that sensory motor development is the basis for later abstract thought. Many people interpreted this to mean that if you improve a child's sensory motor performance, improved cognition and academic behavior would follow. During the 1950's and into the 60's we had a tremendous number of studies carried out attempting to demonstrate the value of perceptual motor programs to children with academic difficulties.

Most of these studies were an example of inappropriate application of theory. Packaged programs were applied with children demonstrating a variety of problems, and the vast majority of these studies were carried out by educators who know little or nothing about motor development sequences. When the results failed to reach statistical significance, perceptual motor theories were discarded because it was concluded that they were of no value. I am still confronted by many educators who question the worth of perceptual motor practices. It is my opinion that inappropriate application was at fault, not the theoretical constructs.

You and I live in an age that is rich in theoretical constructs. Other eras have had their theorists however, because their postulates did not hold up consistently in practice such beliefs were laid to rest in a category called "superstitions". Through time some of our contemporary theories may emerge as learning principles, and some will be remembered as superstitions, but all will generate practice within our lifetime. Until we have had an opportunity to use today's theories to re-examine our traditional approaches, to provide new direction to our future practices and to generate sound research we will not know the true value of the assumptions on which some of our work is based. Without practice free of abuse we will never know the truth or the fallacy of today's theories.

FIGURE A

SENSORY MOTOR DEVELOPMENT MODEL

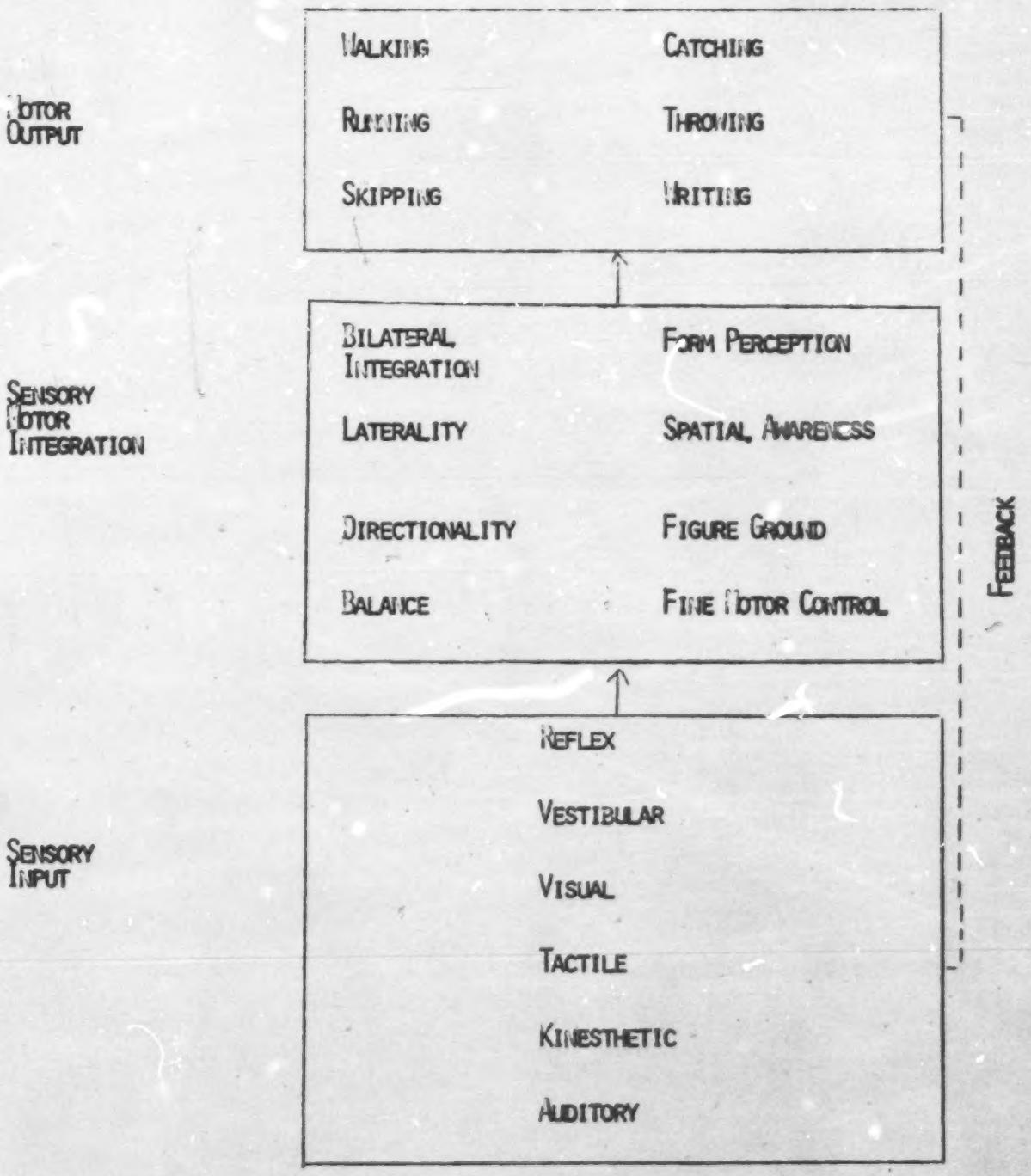


FIGURE B

AYRES' THEORY

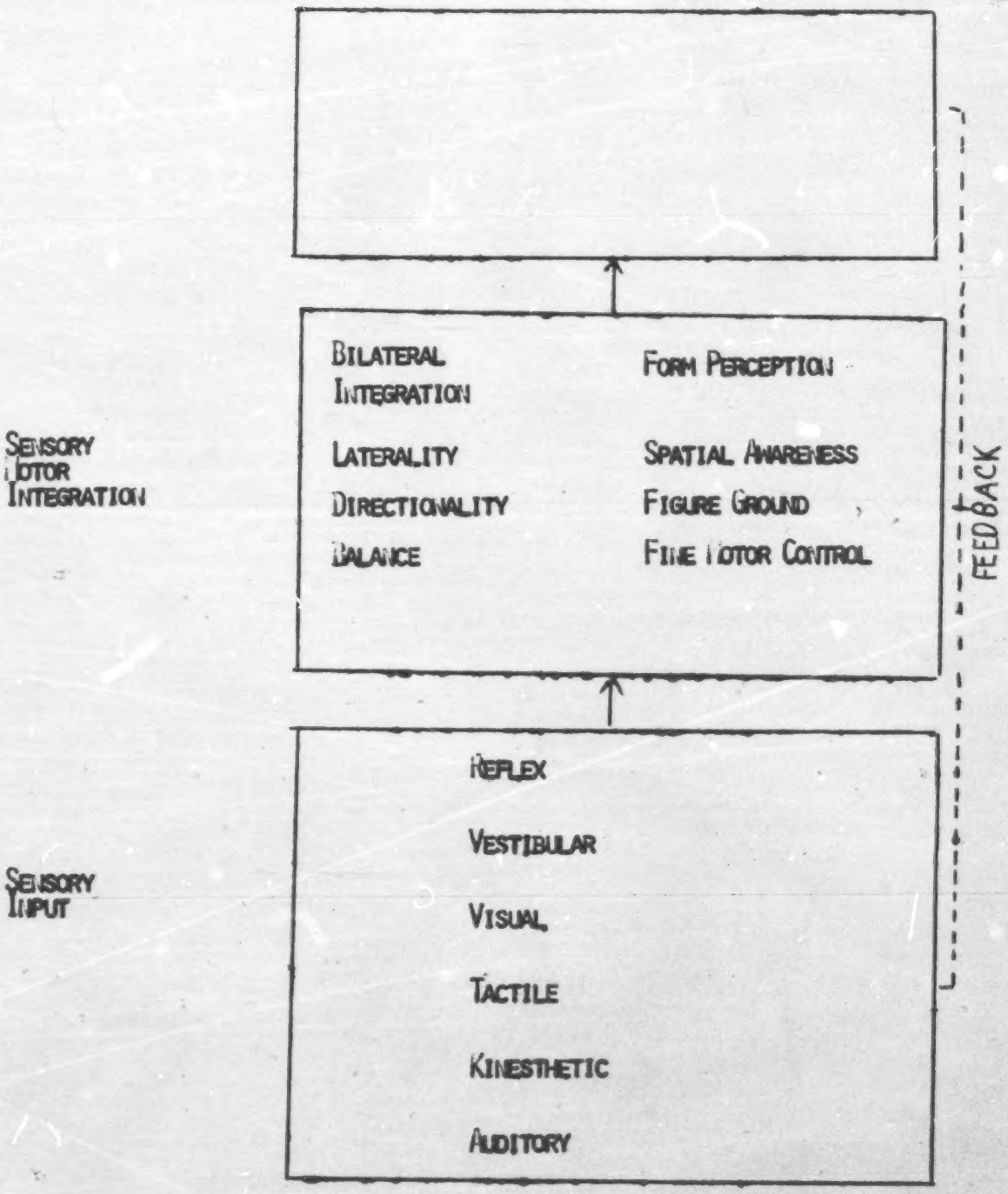


FIGURE C

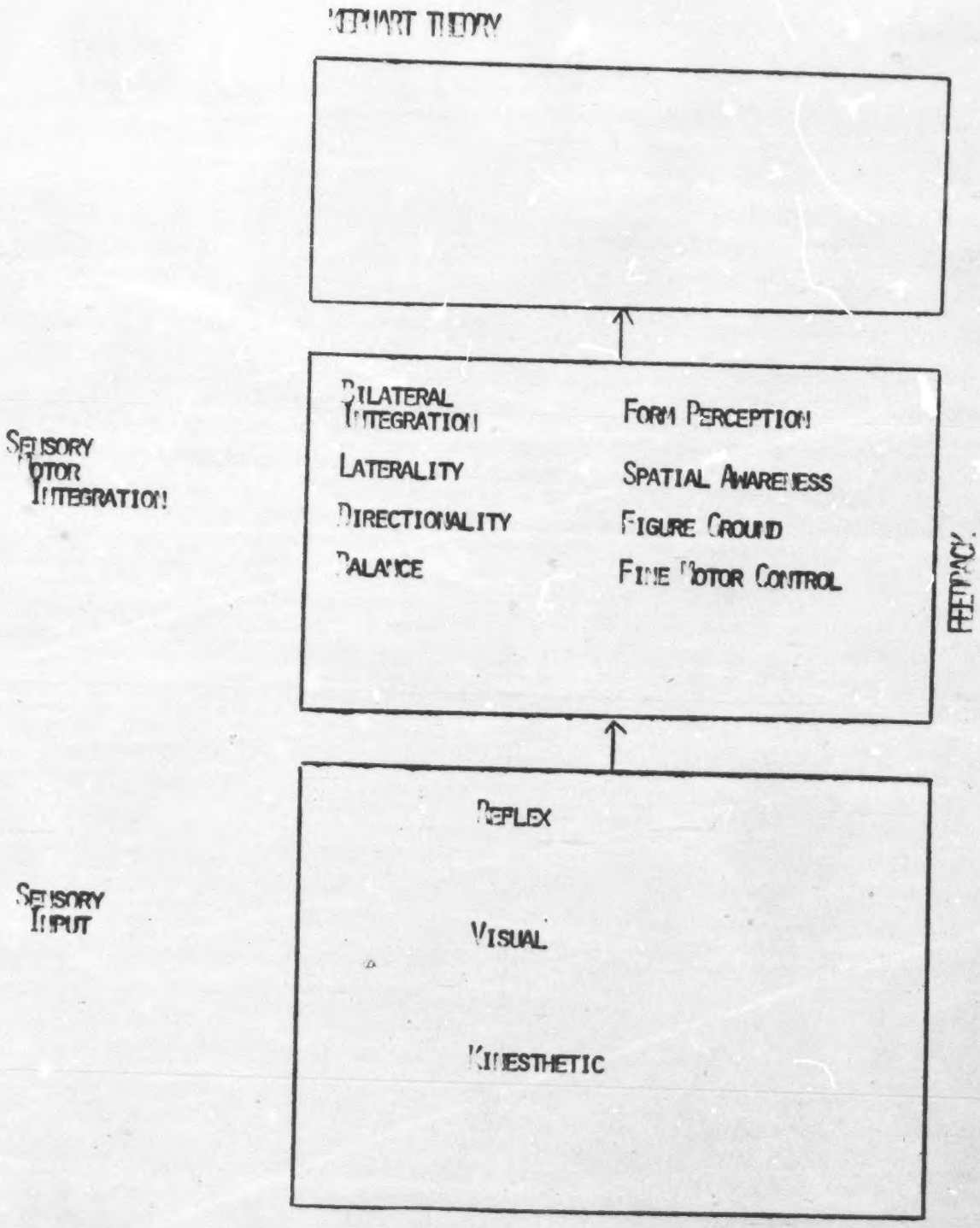
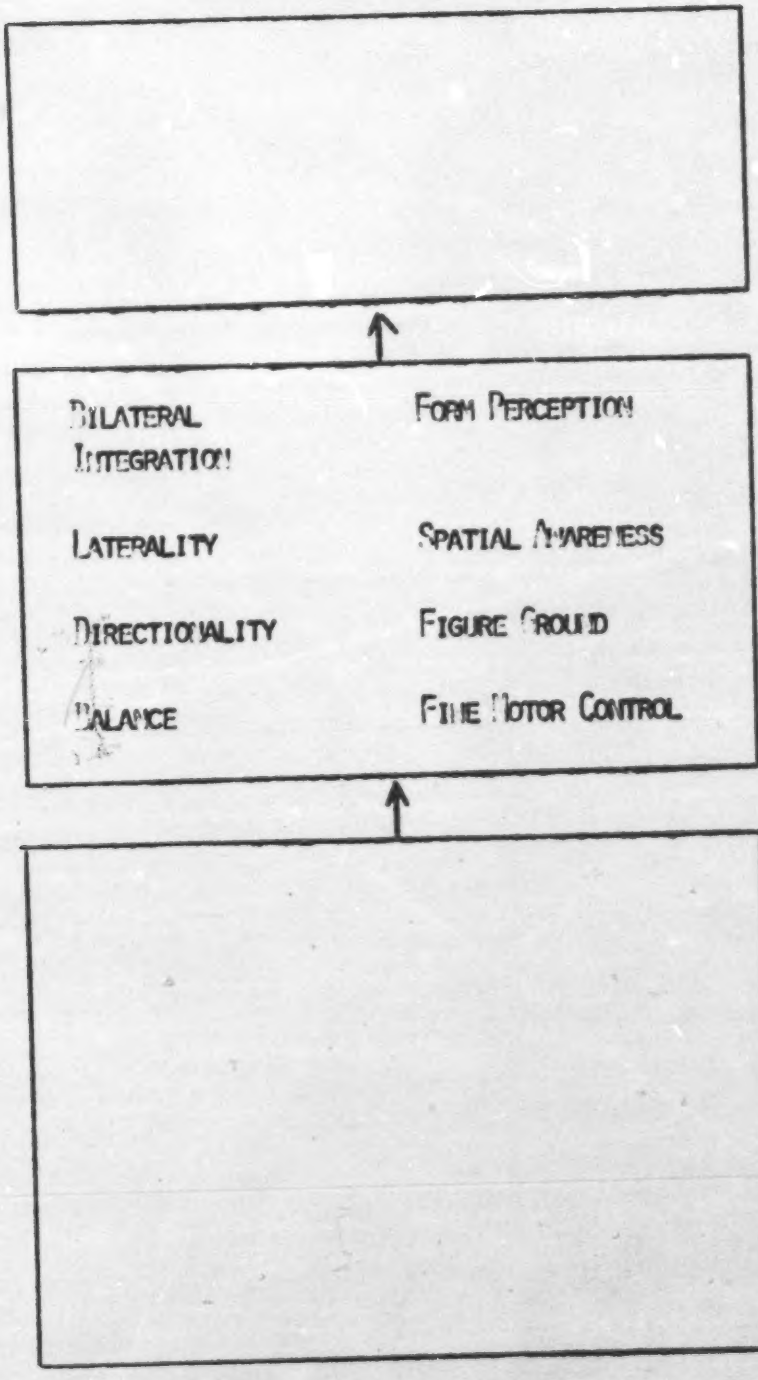

KEPHART THEORY
SENSORY MOTOR INTEGRATION
BILATERAL INTEGRATION
LATERALITY
DIRECTIONALITY
BALANCE
FORM PERCEPTION
SPATIAL AWARENESS
FIGURE GROUND
FINE MOTOR CONTROL
FEEDBACK
REFLEX
VISUAL
KINESTHETIC
SENSORY INPUT

FIGURE D

FROSTIG THEORY



SENSORY MOTOR INTEGRATION

FIGURE E

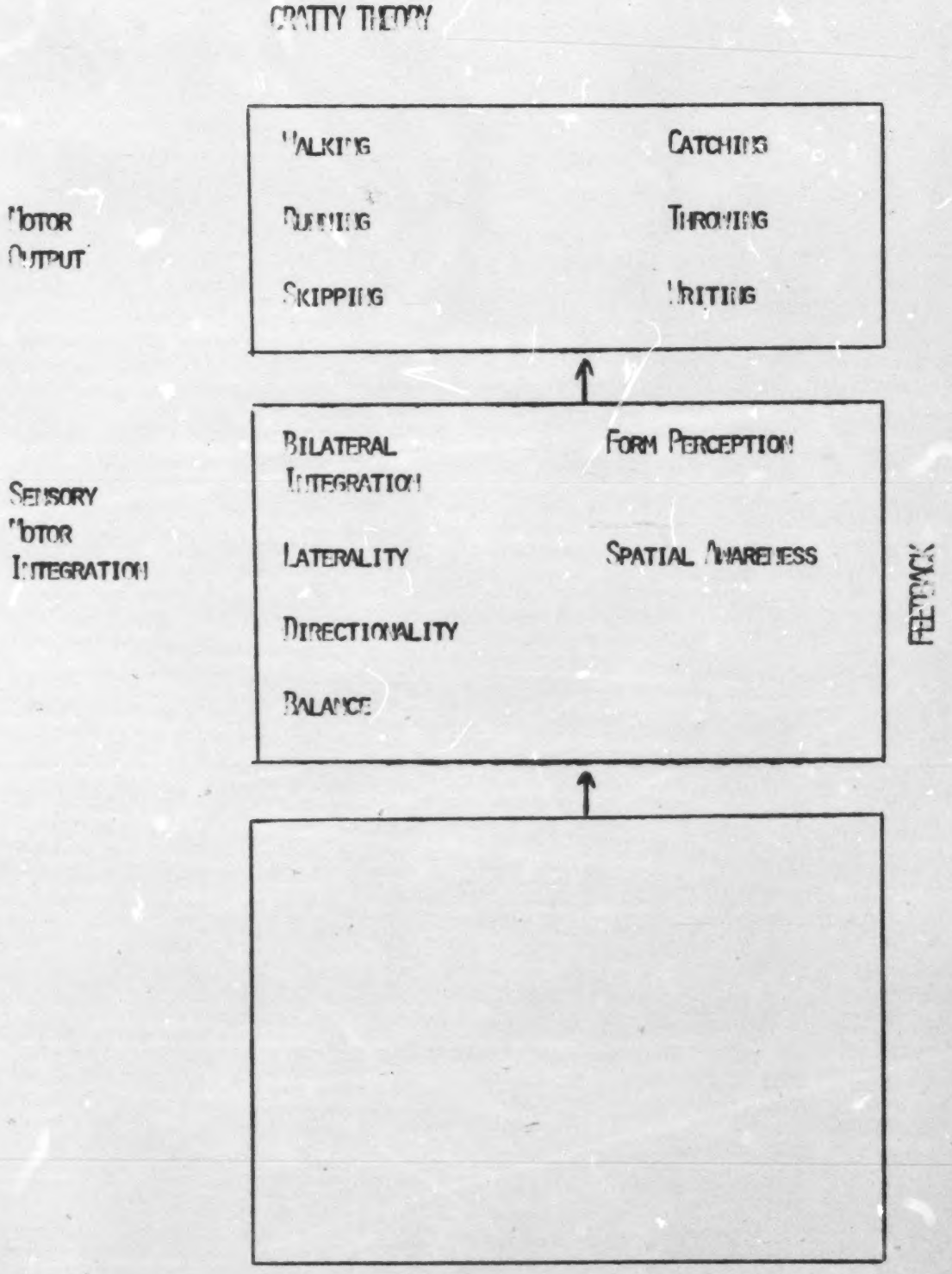

WALKING
CATCHING
RUNNING
THROWING
SKIPPING
WRITING
MOTOR OUTPUT
BILATERAL INTEGRATION
FORM PERCEPTION
SENSORY MOTOR INTEGRATION
LATERALITY
SPATIAL AWARENESS
DIRECTIONALITY
BALANCE
FEEDBACK

FIGURE F

BARSCH THEORY